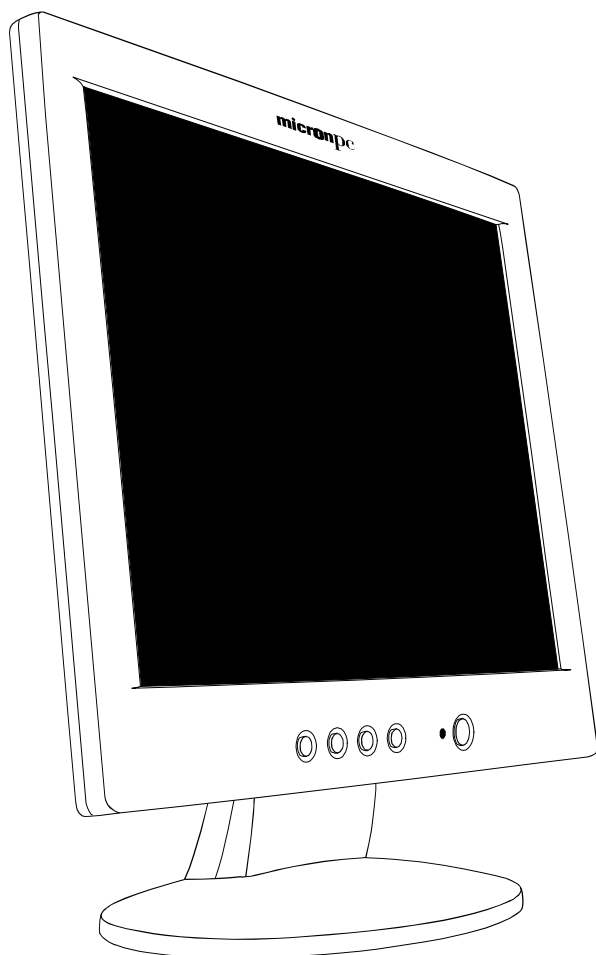


F1500 LCD Monitor

User's Guide



micronpc

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MONITOR USER'S GUIDE

This guide provides important information about operating your monitor. Before using the monitor, please read the user's guide thoroughly, and then save it for future reference.

PACKING LIST

Before setting up and using your monitor, examine the items in the monitor package. If anything is missing or damaged, please contact MicronPC immediately. Look for the following items:

- 15" LCD Monitor
- *F1500 LCD Monitor User's Guide*
- 100/120 VAC rated Power Cord
- External Power Adapter Brick (12 VDC) and Monitor Base



Note: Save the original shipping carton and packing materials in case you ever need to transport or ship your monitor. If you transport the monitor over long distances, completely repackage the monitor in its original packing material.

SAFETY INFORMATION

- Do not use the monitor near standing bodies of water or in humid environments.
- Set the monitor on a flat, stable surface. Do not place it on an unstable cart, stand, or table. If the monitor falls, it might injure a person and/or cause serious damage to the monitor.
- When placing the monitor on a cart or stand, use only a cart or stand recommended by the manufacturer or sold with the monitor. If you mount the monitor on a wall or shelf, use a mounting kit approved by the manufacturer and follow the kit instructions.
- Slots and openings in the back and bottom of the monitor are provided for ventilation. To ensure reliable operation of the monitor, and to protect it from overheating, these openings must not be blocked or covered. Do not place the monitor on a bed, sofa, rug, or similar surface. This monitor must never be placed near or over a radiator or heat register. This monitor must not be placed in a built-in enclosure of any kind unless proper ventilation is provided.

- The monitor must only be connected to the AC power source as indicated on the label. If you are unsure of the type of AC power available, ask your local power company. Only connect this monitor to a power outlet that matches the power requirements of this monitor.
- The monitor is equipped with a three-prong, grounded plug (a plug with a third pin for grounding). For safety purposes, this plug will only fit into a grounded power outlet. If your outlet does not accommodate the three-wire plug, have an electrician install the correct type of outlet, or use an adapter to ground the appliance safely.
- During a lightning storm, unplug the monitor. Also unplug the monitor when it will not be used for a long time. This will protect the monitor from damage due to power surges.
- Do not overload power strips and extension cords. Overloading power strips and extension cords can result in a fire or electric shock.
- Never push objects of any kind into the monitor through openings. The objects could touch dangerous voltage points or short out parts, possibly resulting in an electric shock or a fire hazard.
- Never spill liquid of any kind on the monitor. If this occurs, disconnect from the power source immediately.
- Do not attempt to service the monitor yourself. Opening or removing the monitor's cover can expose you to dangerous voltages and other hazards. Please refer all servicing to qualified service personnel.
- To ensure satisfactory operation, only use the monitor with UL listed computers that have the appropriate configured receptacles marked between 100–240 VAC, Min. 3.5A.
- Do not allow anything to rest on the power cord. Do not place the monitor where people might walk on the cord.
- Do not place the monitor in direct sunlight, or where it is near excessive dust or mechanical vibration or shock.
- This monitor is for use only with the included power adaptor (output 12Vdc) that has a **UL, CSA** listed license.



Warning: To prevent a fire or shock hazard, do not expose the monitor to rain or moisture. Dangerously high voltages are present inside the monitor. Do not open the monitor cabinet. Refer servicing to qualified personnel only.



Warning: Keep all packing materials away from children.

LCD MONITOR FEATURES

Monitor Features

- 15-inch (38.1 cm) TFT Color LCD Monitor
- 75 mm x 75 mm VESA Mounting Pad
- EPA ENERGY STAR®
- Ergonomic Design (complies with MPRII)
- Space Saving, Compact Case Design

The following occurrences are normal with an LCD monitor and do not indicate a problem.

- Due to the nature of the internal fluorescent backlights, the screen may flicker during initial use. If this occurs, turn off the monitor and then turn it on again, making sure the flicker disappears.
- You may find slightly uneven brightness on the screen depending on the desktop pattern you use.
- The LCD screen has an effective pixel count of 99.99% or more. It may include blemishes of 0.01% or less, such as a missing pixel or a pixel lit all of the time. Refer to “Appendix D — Acceptable LCD Defects” for additional details.
- Due to the nature of the LCD screen, an after-image or ghost of the previous image may remain after switching the image when the same image is displayed for a long time. In this case, you can recover the screen slowly by changing the image or turning off the monitor for a few hours.
- The life of the internal fluorescent backlights used in the LCD monitor is approximately 10,000 hours. Contact MicronPC technical support or an authorized dealer for a replacement when the screen is dark, flickering, or not lighting up. Never attempt to replace the light yourself. Refer servicing to qualified personnel only.

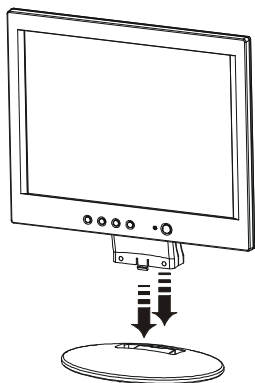
SETUP INSTRUCTIONS

The following sections provide information about attaching the swivel base to your monitor and using the power cord and video cable.

Monitor Base

To install the monitor base, put the monitor in the base until it snaps into place. To remove the monitor base, gently turn monitor upside down and press the two retention clips together to release the base. Pull the base straight away from the monitor. See Figure 1 below.

Install



Remove

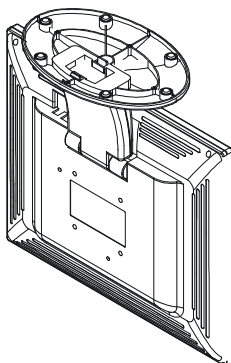


Figure 1: Installing and Removing the Monitor Base

Power Cord and Power Adapter

Before connecting your monitor's power cord and adapter, read the guidelines below:

- Only use the Power Adapter included with your monitor. You should find the following markings on the Power Adapter included with your monitor:
Manufacturer: Linearity Electronics Co; Ltd.
Model: LAD6019AB4
Output: 12 VDC 4 A
- This monitor has a universal power supply, so it can operate in either a 100/120 VAC or 220/240 VAC voltage area (no user adjustment is required).
- Make sure the power cord meets the specifications and requirements for your area. The power cord included with your monitor is rated for 100/120 VAC.

To connect the power cord to your monitor and a power source, follow the steps below:



Caution: *If the AC outlet is not grounded (with three holes), install the proper grounding adapter (not supplied).*

- 1 Plug the power cord into the supplied external power adapter brick. Plug the small end of the power adapter cord (DC Plug) into your monitor's power input socket (DC Jack). See Figure 2.

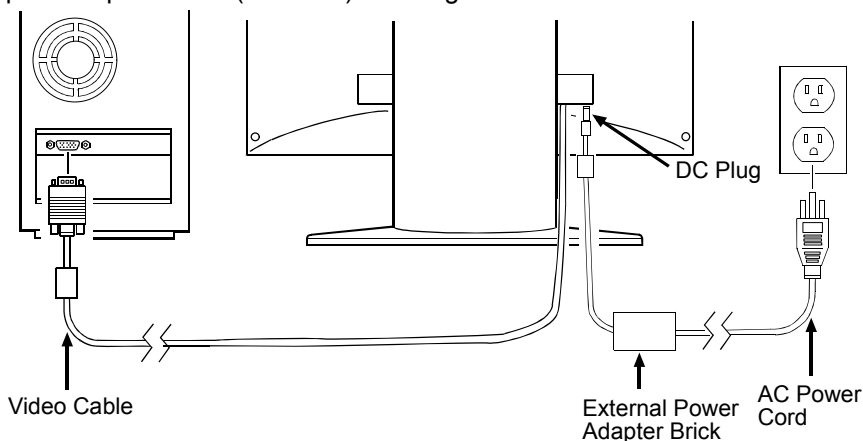


Figure 2: Connecting Cables

- 2 Plug the other end of the power cord into a three-pin AC power outlet or a UL-approved power strip.



Note: *A certified power supply cord must be used with this equipment. The relevant national installation and/or equipment regulations need to be considered. Use a cord that meets the following criteria:*

- *Monitor side must have IEC320-type female, straight plug*
- *Main side must have IEC320-type male, straight plug*
- *Wire type must be UL/CSA certified, 18 AWG X 3C*

Video Cable

The monitor comes with the video cable connection built into the monitor. To connect the video cable to your computer's video port, complete the following steps:



Caution: Do not bend the signal cable excessively, or you might break the wires inside the cable.

- 1 Plug the video cable's 15-pin connector (see Figure 2 on page 7) into the computer's video port, taking care not to bend any pins on the connector.
- 2 Tighten the two screws on the video connector with your fingers to secure the connection.



Note: Over-tightening this connection can damage the monitor cable or your computer's video card.

ADJUSTING THE VIEWING ANGLE

- For optimal viewing, look at the full face of the monitor, and then adjust the monitor's angle to your own preference.
- Hold the base so the monitor does not fall when you change the monitor's angle.
- You are able to adjust the monitor's angle from -5° to 25° .

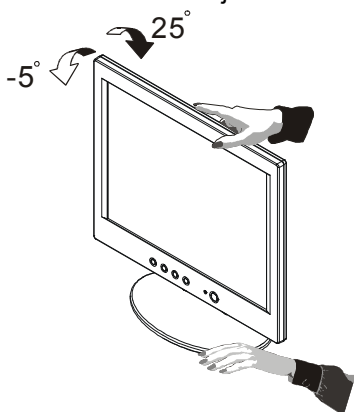


Figure 3: Adjusting the Monitor's Angle



Caution: Do not touch the LCD screen when you change the angle, or the screen may become damaged or broken.



Warning: Be careful not to pinch your fingers when adjusting the monitor's angle.

OPERATING INSTRUCTIONS

The following sections provide information about operating and adjusting your monitor.

General Instructions

To turn on the monitor, do the following:

- 1 Check that the power supply is connected to the monitor and a power outlet or socket.
- 2 Check that the video cable is connected to your computer's video port.
- 3 Locate the power button (see Figure 4 and Table 1 on page 10).
- 4 Press the power button. The power indicator will light up. The monitor features a unique quick-switch system, so a picture should appear within seconds after the monitor is turned on.

Cleaning the Monitor

To keep the monitor looking new, periodically clean the monitor's case with a soft cloth. As a safety precaution, always unplug the monitor before cleaning it. Stubborn stains on the monitor's case can be removed using a damp, dust-free cloth and a mild detergent solution.



Caution: *Never use strong solvents, such as thinner, benzene, or abrasive cleaners, because these will damage the monitor.*

To clean the LCD screen, use a damp cloth; however, make sure the monitor has been turned off first. Never apply water directly to the LCD screen. Always apply the water to the cloth first, and then wipe down the screen. You can also purchase and use monitor wipes to clean the LCD screen.

Front Panel Controls

The power button is located on the front panel of the monitor. The buttons to the left of the power button are for adjusting the monitor's picture. See Figure 4 and Table 1 on page 10 for the layout and names of the control buttons.

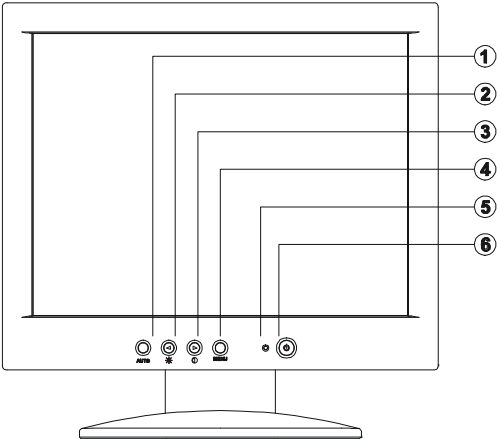


Figure 4: Control Buttons

Table 1: Control Buttons Descriptions

Feature		Description
1	Auto Config	The Auto Config button is used to automatically set the H-Pos, V-Pos, Clock, and Focus. Press and hold this button for 2 seconds to begin the auto config cycle.
2	Brightness ☀ / ◀	Press this button to adjust your monitor's brightness. If the OSD is open, this button will move through the selections in a counter-clockwise direction.
3	Contrast ◐ / ▶	Press this button to adjust your monitor's contrast. If the OSD is open, this button will move through the selections in a clockwise direction.
4	Menu/Enter	Press this button to open the On Screen Display (OSD) menu or to select an adjustment icon within the OSD.

Table 1: Control Buttons Descriptions (Continued)

Feature		Description
5	Power Indicator	Power Indicator: Green = power on mode (normal operation) Orange = low power mode (low power consumption; no picture)
6	Power Button	Press this button to turn the monitor on and off.

Accessing the Adjustment Controls

The following list explains how to access and use the adjustment controls appearing in the On Screen Display (OSD) Main Menu:

- 1 Press the Menu button to make the OSD window appear. The menu will look like Figure 5.
- 2 Press the ◀ or ▶ buttons to select the desired function.
- 3 Press the Menu button to select the function that you want to adjust.
- 4 Press the ◀ or ▶ buttons to change the settings of the current function.
 - When the OSD window is active, it shows the input signal timing. The **H** stands for the horizontal frequency and **V** for the vertical frequency.
 - To exit and save, select the exit functions, or leave the monitor alone for 10 seconds. If you want to adjust any other function, repeat steps 2-4.

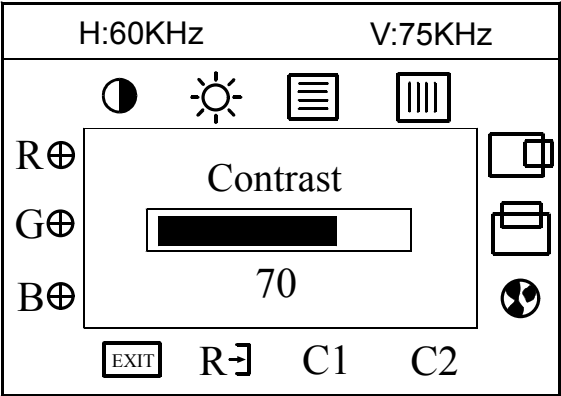


Figure 5: On Screen Display (OSD) Menu



Note: If you do not make any OSD menu adjustments or selections for more than 10 seconds, the current setup will be saved, and the OSD will disappear automatically.

Adjusting the Picture

The table below describes the functional control icons that appear on the OSD menu.

Table 2: Functional Control Icons

Function	Icon	Description
Contrast		Use this function to adjust the picture's contrast.
Brightness		Use this function to adjust the picture's brightness.
Focus		Use this function to adjust the picture's focus. The Focus adjusts the phase of the pixel clock signal. With a wrong phase adjustment the picture has horizontal disturbances or lines in a bright picture.
Clock		Use this function to adjust the picture's clock. The Clock (pixel frequency) controls the number of pixels scanned by one horizontal sweep. If the frequency is not correct, the screen shows vertical stripes and the picture will not be the correct width.
H-Position		Use this function to adjust the picture's horizontal position.
V-Position		Use this function to adjust the picture's vertical position.
Language		Use this function to select which language the monitor will use to display the instructions.
Cool Color	C1	The color temperature of approximately 6500°K can be selected here.

Table 2: Functional Control Icons (Continued)

Function	Icon	Description
Warm Color	C2	The color temperature of approximately 7800°K can be selected here.
Reset	R↩	Use this function to clear each old status of auto-configuration and to redo auto-configuration.
Exit	EXIT	Use this feature to save your selections and adjustments and to exit the OSD menu.
Blue	B⊕	Use this function to adjust the picture's blue intensity.
Green	G⊕	Use this function to adjust the picture's green intensity.
Red	R⊕	Use this function to adjust the picture's red intensity.

MONITOR DRIVERS

During normal operation, your system will automatically detect your monitor, and Plug and Play drivers will automatically be installed.

If your application requires a specific monitor driver and color matching profile, these can be downloaded from the MicronPC Technical Support Site at <http://www.micronpc.com/support/index.html>.

If you do not have Internet access, you may also call MicronPC Technical Support at (800) 877-8856 to request the files be sent to you.

WARRANTY INFORMATION

In the unlikely event that you have a failure with your MicronPC monitor, you can contact MicronPC Technical Support at <http://www.micronpc.com/support/index.html>.

If you do not have Internet access, you may also call MicronPC Technical Support at (800) 877-8856.

Technical Support will provide you with instructions for returning the failed monitor.

FEATURES

Energy Star Standards

This monitor may appear to be non-functional if there is no video input signal. For this monitor to operate properly, there must be a video input signal.

This monitor meets power management standards as set by the Video Electronics Standards Association (VESA) and/or the United States Environmental Protection Agency (EPA) and the Swedish Confederation Employees (NUTEK). This feature is designed to conserve electrical energy by reducing power consumption when there is no video input signal present. When there is no video input signal, this monitor, following a time-out period, will automatically switch to a low power consumption mode. This reduces the monitor's internal power supply consumption. After the video input signal is restored, full power is restored, and the display is automatically redrawn. The appearance is similar to a "Screen Saver" feature, except the display is completely off. The display is restored by pressing a key on the keyboard or clicking the mouse.

Plug & Play DDC1/2B Feature

This monitor is equipped with VESA DDC1/2B capabilities according to the VESA DDC STANDARD. These capabilities allow the monitor to inform the host system of its identity and, depending on the level of DDC used, communicate additional information about its display capabilities. The communication channel is defined in two levels: DDC1 and DDC2B.

The DDC1 is a uni-directional data channel from the display to the host that continuously transmits EDID information. The DDC2B is a bi-directional data channel based on the I²C protocol. The host can request EDID information over the DDC2B channel.

See "Appendix G — Connector Pin Assignment" on page 22 for the connector pin assignments.

APPENDIX A — TROUBLESHOOTING

If the following information does not successfully solve your issue, please visit the MicronPC Technical Support Site at <http://www.micronpc.com/support/index.html>.

If you do not have Internet access, you may also call MicronPC Technical Support at (800) 877-8856.

Table 3: Troubleshooting Monitor Issues

Issue	Solution
The power indicator LED is not lit.	• Press the monitor power button once to see if the LED comes on. • Verify that the power cord is plugged in firmly and correctly.
The monitor is not detected by the system when it is connected.	• Verify the PC system is Plug & Play compatible. • Verify the Video Card is Plug & Play compatible. • Check the DB-15 plug on the Video Cable for bent pins.
The picture is fuzzy.	• Adjust the contrast and brightness controls. • Initiate the automatic calibration function by pressing the 'Auto' button.
The picture bounces or a wave pattern is present in the picture.	• Initiate the automatic calibration function by pressing the 'Auto' button. • Manually adjust the Clock and Focus controls for better picture.
The monitor's picture is missing one of the primary colors (red, green, or blue).	• Inspect the monitor's video cable and make sure that none of the pins are bent.
The screen image is not centered or sized properly.	• Adjust pixel frequency (Clock) and Focus, or press the Auto Config button.

Table 3: Troubleshooting Monitor Issues (Continued)

Issue	Solution
The picture has color defects (white does not look white).	• Adjust the RGB color or select a color temperature.
The power LED is on (orange), but there is no video or picture.	• Make sure the computer's video card is completely seated in the slot. • Make sure the monitor's video cable is properly connected to the computer. • Inspect the monitor's video cable and make sure that none of the pins are bent. • Make sure the computer is operational by pressing the [Caps Lock] key on the keyboard while observing the Caps Lock LED. The LED should either turn on or off after you press the [Caps Lock] key. • Your computer may be in a low power state. Move the system's mouse and press several keys on the keyboard to wake the system.
The picture has poor brightness or contrast.	• The lifetime of the back-light is limited. After 10,000 hours of use, the luminance of the light may be reduced to half of its original value. Please send the monitor to an authorized service agent for service.
There are horizontal or vertical disturbances on the screen.	• Use a pattern with a repetitive dot pattern to manually adjust the Clock and Focus, or press the Auto Config button.

APPENDIX B — VESA MOUNTING

Attaching an Optional Wall-Mounting Arm

This monitor can be attached to a wall-mounting arm, which you purchase separately. This monitor has a 75 mm x 75 mm VESA compliant mounting pad. Use a wall-mounting arm with this configuration only.



Caution: *Be careful when installing the wall-mounting arm. Make sure you properly support the monitor, so the LCD panel is not damaged.*

Preparing to Install a Wall-Mounting Arm

To prepare to install a wall-mounting arm, complete the following steps:

- 1 If the monitor is currently in use, turn it off and disconnect the power adapter.
- 2 Pull the screw covers off the back of the monitor. (See Figure 6.)
- 3 Support the base and remove the screws.
- 4 Remove the base. (See Figure 6.)

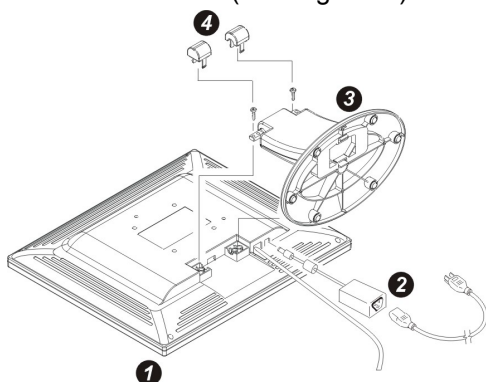


Figure 6: Preparing to Install an Optional Wall-Mounting Arm

- 5 Follow the manufacturer's instructions to assemble the wall mounting arm.

Installing a Wall-Mounting Arm

To install the wall-mounting arm, complete the following steps:

- 1 Place the wall mounting arm onto the back of the monitor. Line up the holes of the arm with the holes in the back of the monitor.
(See Figure 7.)

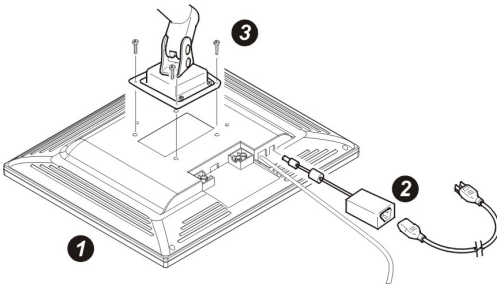


Figure 7: Installing a Wall-Mounting Arm

- 2 Insert the four screws into the holes and tighten (see Figure 7). Be careful to not over tighten the screws.
- 3 Insert the power cable into the slot on the back of the monitor.

APPENDIX C — ON-SCREEN MESSAGES

Table 4: On-Screen Messages

Message	Action
"Cable Not Connected"	• Check that the signal cable is properly connected. If the connector is loose, tighten the connector screws. • Check the DB-15 plug on the video cable for bent pins or other damage.
"Input Not Supported"	• Your system may be set outside the display mode range of the monitor. Verify you are using a compatible display mode. See Table 7: Factory Preset Timing.

APPENDIX D — ACCEPTABLE LCD DEFECTS

Table 5: Acceptable LCD Panel Defects

Bright Dot Failures (Always On) Bright dots are tested with full screen black pattern (R,G,B=0,0,0)	• Maximum five red, green or blue bright dots (sub-pixels) • Maximum three green dots • Maximum one joined bright dots • Minimum distance between two bright dots: 10 mm
Black Dot Failures (Always Off) Black dots are tested with full screen white pattern (R,G,B=255,255,255)	• Maximum five black dots • Maximum two joined (two adjacent) black dots • Minimum distance between two black dots: 10mm • No defects allowed with three adjacent black dots
Total Dot Failures	• Maximum of eight dots (including bright and dark dot defects)

APPENDIX E — MONITOR SPECIFICATIONS

Table 6: Monitor Specifications

LCD Panel	• Type: TFT Active Matrix Color LCD • Size: 15.0 in (38.1 cm) • Viewable Size: 15.0 in (38.1 cm) • Pixel pitch: 0.297 mm(H) x 0.297 mm(V) • Viewable angle: 120°(H) 100°(V) • Response time: 35 ms • Native Panel Resolution: 1024 x 768 • Contrast Ratio: 250:1 (Typical) • Brightness: 200 nits (Typical)
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Table 6: Monitor Specifications (Continued)

Scan Range	• H-Frequency: 30 kHz to 60 kHz • V-Frequency: 55 Hz to 75 Hz
Dot Clock	• 80 MHz
Recommended Viewing Resolutions	• Minimum: 640 x 480 @ 60 Hz • Nominal: 1024 x 768 @ 60 Hz • Maximum: 1024 x 768 @ 75 Hz
Maximum Resolution	• 1024 x 768 @ 75 Hz
Display Colors	• 16.7 million Colors
Plug & Play	• VESA DDC1/2B™
EPA ENERGY STAR®	• Normal Mode: ≤ 35 W • Active OFF Mode: ≤ 3 W
Input Video	• R,G,B Analog Interface
Input Connector	• 15-pin Captive D-Sub
Input Video Signal	• Analog: 0.7 Vp-p(standard) • 75 OHM • Positive
Power Source	• AC Source: 100 to 240 VAC 50/60 Hz • DC Adapter: 12 VDC 4A
Environmental Considerations	• Operating Temp: 41°F to 95°F (5°C to 35°C) • Storage Temp: -4°F to 140°F (-20°C to 60°C) • Operating Humidity: 10% to 85%

Table 6: Monitor Specifications (Continued)

Weight	- Shipping: 9.9 lb (4.5 kg) - Display Only: 7.1 lb (3.2 kg)
Dimensions	356(W) x 358(H) x 160(D) mm
Regulatory Compliance	UL, CSA, FCC, GS/TÜV, CE

APPENDIX F — FACTORY PRESET TIMING

Table 7: Factory Preset Timing

Standard	Resolution	Horizontal Frequency	Vertical Frequency
DOS	640 x 350	31.469 kHz	70 Hz
	720 x 400	31.469 kHz	70 Hz
VGA	640 x 480	31.470 kHz	60 Hz
	640 x 480	37.860 kHz	72 Hz
	640 x 480	37.500 kHz	75 Hz
SVGA	800 x 600	35.156 kHz	56 Hz
	800 x 600	37.879 kHz	60 Hz
	800 x 600	48.077 kHz	72 Hz

APPENDIX G — CONNECTOR PIN ASSIGNMENT

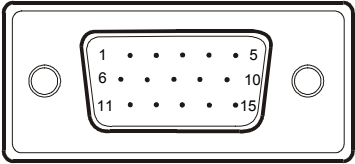


Figure 8: 15-pin Color Display Signal Cable

Table 8: Video Cable Pin Assignment

Pin #	Description	Pin #	Description
1	Red	9	+5V
2	Green	10	Detect Cable
3	Blue	11	Ground
4	Ground	12	DDC-Serial Data
5	Ground	13	H-sync
6	R-Ground	14	V-sync
7	G-Ground	15	DDC-Serial Clock
8	B-Ground		

APPENDIX H — FCC NOTICE

FCC Class B Radio Frequency Interference Statement

WARNING: (FOR FCC CERTIFIED MODELS) This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- 1 Reorient or relocate the receiving antenna.
- 2 Increase the separation between the equipment and receiver.
- 3 Plug the equipment into an outlet on a different circuit than the receiver is connected.
- 4 Consult the dealer or an experienced radio/TV technician for help.

Notice:

Any changes or modifications to the monitor not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Shielded interface cables and AC power cord, if any, must be used to comply with the emission limits.

The manufacturer is not responsible for any radio or TV interference caused by unauthorized modification to this equipment. It is the responsibility of the user to correct such interference.

This product meets the ENERGY STAR[®] guidelines for energy efficiency.

